DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/Ala Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-006734
Date Inspected: 05-May-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1845
OSM Departure Time: 645
Location: Shanghai, China

CWI Name: Tu Jun, Liu Yang, Liu Zhang An, Cai Zhi Ning **CWI Present:** ☑ Yes ☐ No

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Tower and OBG Components

Summary of Items Observed:

On this date Caltrans OSM Quality Assurance (QA) Inspector George Goulet was present during the times noted above for observations relative to the work being performed.

Bay 10

This QA Inspector, George Goulet, proceeded to Bay 10 in response to a ZPMC notification of witness inspection #2940 for MT inspection as follows:

This QA Inspector, George Goulet, performed MT of approximately 15% of the area previously tested and accepted by ZPMC Quality Control personnel. This QA Inspector, George Goulet, generated an MT report for this date. The member is identified as WD1-A467-43M-3. The weld designations reviewed are as follows: 17~20, 25~28, 45~52, 69~72. This QA Inspector, George Goulet, also notated MT review on the member.

This QA Inspector, George Goulet, also randomly observed the following work in progress in Bay 10:

SMAW welding of weld joints ED1-A27A/E-78 – 100mm from the top end, and 77 – 25mm from the top end, located on PCMK east tower, face A – base shear plate. Welder was identified as 040333. ZPMC QC was identified as Liu Yang (QC1). Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Yong Yi, who was not a CWI.

FCAW welding of weld joint SSD1-TL5J/L-55 located on PCMK south tower, lift 2, skins B/C, between diaphragms 62M

and 65M. The welder was identified as 201825. ZPMC QC was identified as Liu Zhong An (QC2). The welding variables recorded by QC2 appeared to comply with WPS-B-T-2332-Tc-P4-F.

FCAW welding of weld joint SSD1-TL5J/L-55 located on PCMK south tower, lift 2, skins B/C, between diaphragms 74M and 77M. The two welders were identified as 203977, 057180. ZPMC QC was identified as QC2. The welding variables recorded by QC2 appeared to comply with WPS-B-T-2332-Tc-P4-F.

FCAW welding of weld joints SSD1-TL5J/L-57, 58 located on PCMK south tower, lift 2, skins C/D, between diaphragms 74M and 77M. Welders were identified respectively as 053869, 201825. ZPMC QC was identified as QC2. The welding variables recorded by QC2 appeared to comply with WPS-B-T-2331-Tc-P4-F.

FCAW welding of weld joint SSD1-TL5J/L-55 located on PCMK south tower, lift 2, skins B/C, above diaphragm 80M. The welder was identified as 057244. ZPMC QC was identified as QC2. The welding variables recorded by QC2 appeared to comply with WPS-B-T-2332-Tc-P4-F.

FCAW welding of weld joint SSD1-TL5J/L-58 located on PCMK south tower, lift 2, skins C/D, between diaphragms 77M and 80M. The welder was identified as 040457. ZPMC QC was identified as QC2. The welding variables recorded by QC2 appeared to comply with WPS-B-T-2332-Tc-P4-F.

Bay 11
This QA Inspector, George Goulet, randomly observed the following work in progress in Bay 11:

FCAW welding of weld joints WSD1-A115F/J-37, 38 located on PCMK south tower, lift 1, skin E, at diaphragm 38M. The welder was identified as 069043. ZPMC QC was identified as Zhang Zhi Neng (QC3). The welding variables recorded by QC3 appeared to comply with WPS-B-T-4333-Tc-P4-F.

FCAW welding of weld joints WSD1-A115E/J-35, 39 located on PCMK south tower, lift 1, skin E, at diaphragm 33M. The welder was identified as 069043. ZPMC QC was identified as QC3. The welding variables recorded by QC3 appeared to comply with WPS-B-T-4333-Tc-P4-F.

FCAW welding of weld joints WSD1-A115D/J-30, 31 located on PCMK south tower, lift 1, skin E, at diaphragm 28M. The welder was identified as 066484. ZPMC QC was identified as QC3. Assisting QC3 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Fu Wei Min, who was not a CWI. The welding variables recorded by QC3 and his assistant appeared to comply with WPS-B-T-4333-Tc-P4-F.

FCAW welding of weld joints WSD1-A423G/J-31 located on PCMK south tower, lift 1, skin E, at diaphragm 18M. The welder was identified as 069095. ZPMC QC was identified as QC3. Assisting QC3 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Fu Wei Min, who was not a CWI. The welding variables recorded by QC3 and his assistant appeared to comply with WPS-B-T-4333-Tc-P4-F.

During in the above noted in process inspection of west tower shaft, lift 1, this QA Inspector, George Goulet, observed the following: diaphragm to skin E stiffener, multiple pass, vertical FCAW single bevel groove weld fill passes being performed with weld widths as follows:

Diaphragm 28M: WSD1-A115D/J-30 = 29mm
Diaphragm 28M: WSD1-A115D/J-31 = 38mm
Diaphragm 33M: WSD1-A115E/J-35 = 28mm
Diaphragm 33M: WSD1-A115E/J-39 = 35mm
Diaphragm 38M: WSD1-A115F/J-38 = 30mm

According to AWS D1.5, Section 4.14.1.5 FCAW, when welding (FCAW) in the vertical position, a split-layer technique shall be used when the width of the layer exceeds 25 mm. On this date, this QA Inspector, George Goulet, generated an Incident Report concerning this issue.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.

Summary of Conversations:

As noted above, and this QA Inspector, George Goulet, informed ZPMC CWI Zhang Zhi Neng, ZPMC QA Fu Yuhong, ABFJV QC Don Walton, and Caltrans Structural Materials Representative Serge Sinevod of the above noted incident and generation of the Incident Report.

This QA Inspector, George Goulet, asked each QC if all the welding variables observed by him appeared to comply with the appropriate WPS, including the preheat requirements according to thickness of the thickest member being welded. Each QC showed this QA Inspector, George Goulet, that he was carrying the proper temperature sticks to monitor the minimum and maximum preheat and interpass temperatures and replied that all he observed did appear to comply.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

Inspected By:	Goulet,George	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer